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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,317	05/02/2001	Takehiro Shiimoto	925-193	4714

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EXAMINER

NGUYEN, TUAN N

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/846,317

Applicant(s)

SHIOMOTO, TAKEHIRO

Examiner

Tuan N Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on September 11, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

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### *Response to Appeal*

1. In respond to applicant's response to Appeal filed September 11, 2003, in relation to the Final Rejection mailed on February 12, 2003 have been considered. The Final Rejection has been withdrawn, and moot in view of new ground(s) of rejection.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-12 are rejected under 35 U.S.C 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, **for example**.

Claims 1, 7, 10, and 11 recite a semiconductor laser device: "...a first semiconductor laser element directly *or indirectly mounted* onto the surface of the stem...a plurality of semiconductor laser elements disposed on top of one another and directly or indirectly mounted onto the mounting surface of the stem..." It is not clear what is the function of the stem, if the laser element not mounted on it. Furthermore, claim 10 recite "...a second semiconductor laser element *disposed at least partially over* said first semiconductor laser element and *also supported by the mount*,..." It is vague and indefinite, if the second laser element is partially over the first laser element while also partially over the mount, or just being on top of the first

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semiconductor. There is insufficient structure and functional relationship, which render the claims vague and indefinite. Claims 2-6, 8-9 and 12 are rejected base on the same reason.

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***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli (US 5402436).

With respect to claims 1, 3, 7, 10, and 12 Paoli '436 shows in figures 4,5,6,8 and discloses in the ABSTRACT a semiconductor laser device comprising: a) a stem having a mounting surface (F 5: 408; F 8: 200) where a plurality of semiconductor mounting on it, b) a first semiconductor laser element mounted directly onto the stem while a second semiconductor laser element disposed on top to the first semiconductor (F 5: 410, 412; F 8: 200), where the first

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and second semiconductor having different wavelength (Col 12: 37-67). The claims further require that the temperature dependent of the semiconductor next to the stem is higher than then semiconductor further away from the stem. (Col 12: 55-60) further discloses wherein the first semiconductor is mounted on the first heat sink and the second semiconductor is mounted on the second heat sink. It is well known in the art that semiconductor laser produce heat and semiconductor laser needs to have cooling mechanism to keep the semiconductor laser stable else it will be inoperative or have a short life. Applicant's invention shown in figures 2, 4 and Paoli '436 shows in PRIOR ART (F 5,8) the larger laser device. It is inherently well known that "larger" semiconductor surface will provide more conduction or cooling stability for the element; Therefore, Paoli '436 (PRIOR ART) recognized having the semiconductor that has higher temperature dependent next to the stem, while the less depending semiconductor laser can be mounted further away. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claims 4, 5, 6 Paoli '436 discloses the semiconductor diode laser made from different materials and disclose the distance between the emission points is 160 micrometer or less. (Col 7: 29-32) (Col 12: 50-60). It has been held that omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

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With respect to claims 2, 8, 9, 11, the claims further require that the laser further from the stem having a wavelength of 770-800nm while the semiconductor laser next to the stem have the wavelength of 640-660 nm. It is well known in the art to recognized that the semiconductor wavelength in the nanometer range. While discovering the optimum or workable ranges, in this case is the wavelength of the semiconductor, involves only routine skill in the art. In re Aller, 105 USPQ 233. or shown in Hide et al. (US 5966393) Fig. 2 the general range of semiconductor wavelength.

#### ***Citation of Pertinent References***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show the product of the instant invention.

Takagi (US 5636234), Peterson (US 6240113), Shima et al. (US 5638391), Sakuma et al. (US 4092614), Kao et al. (US 4901325) – discloses two semiconductors lying next to a stem or heat sink.

#### ***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the

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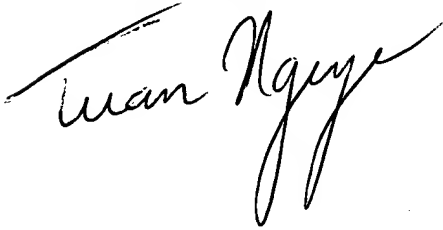
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organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read "Tuan Nguyen", with a stylized, cursive script.